

Application Serial No. 10/801,956

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**Amendments to the claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of claims:**

1. (Currently amended) A method of detecting DNA markers in the *12q22-23* region, comprising:

providing a sample containing ~~acellular~~ DNA from a human subject, wherein the DNA exists as acellular DNA in the subject; and detecting one or more DNA markers in the *12q22-23* region extending from D12S1657 to D12S346 in the sample on the DNA.

2. (Original) The method of claim 1, wherein the sample is a serum sample.

3. (Original) The method of claim 1, wherein the sample is a plasma sample.

4. (Withdrawn) The method of claim 1, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

5. (Original) The method of claim 1, wherein the DNA markers are associated with the *APAF-1* gene.

6. (Currently amended) A method of detecting melanoma cancer, comprising:

providing a sample containing ~~acellular~~ DNA from a human subject, wherein the DNA exists as acellular DNA in the subject; and

~~detecting one or more analyzing~~ DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the *12q22-23* region in the sample on the DNA, wherein LOH of any of ~~the DNA markers~~ D12S1657, D12S393, D12S1706, and D12S346 is indicative of melanoma cancer.

7. (Original) The method of claim 6, wherein the sample is a serum sample.

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8. (Original) The method of claim 6, wherein the sample is a plasma sample.
9. (Withdrawn) The method of claim 6, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.
10. (Original) The method of claim 6, wherein the DNA markers are associated with the *APAF-1* gene.
11. (Canceled)
12. (Currently amended) The method of claim ~~11~~ 6, wherein the melanoma is a primary melanoma.
13. (Currently amended) The method of claim ~~11~~ 6, wherein the melanoma is a metastatic melanoma.
- 14-16. (Canceled)
17. (Currently amended) A method of staging melanoma or colon cancer, comprising:  
providing a sample containing acellular DNA from a human subject suffering from melanoma or colon cancer; and  
~~detecting one or more~~ analyzing DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the 12q22-23 region in the sample on the DNA, wherein LOH of any of the DNA markers D12S1657, D12S393, D12S1706, and D12S346 indicates a high probability of a metastatic cancer.
18. (Original) The method of claim 17, wherein the sample is a serum sample.
19. (Original) The method of claim 17, wherein the sample is a plasma sample.
20. (Withdrawn) The method of claim 17, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

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21. (Original) The method of claim 17, wherein the DNA markers are associated with the *APAF-1* gene.

22-25. (Canceled)

26. (Currently amended) A method of monitoring progression of melanoma or colon cancer, comprising:

providing a sample containing ~~acellular~~ DNA from a human subject suffering from melanoma or colon cancer; and

~~detecting one or more~~ analyzing DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the 12q22-23 region in the sample on the DNA, wherein LOH of any of the ~~DNA markers~~ D12S1657, D12S393, D12S1706, and D12S346 indicates a high probability of a progressing cancer.

27. (Original) The method of claim 26, wherein the sample is a serum sample.

28. (Original) The method of claim 26, wherein the sample is a plasma sample.

29. (Withdrawn) The method of claim 26, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

30. (Original) The method of claim 26, wherein the DNA markers are associated with the *APAF-1* gene.

31-34. (Canceled)

35. (Currently amended) A method of ~~determining~~ predicting the efficacy of a ~~cancer therapy~~ melanoma biochemotherapy, comprising:

providing a sample containing ~~acellular~~ DNA from a human subject suffering from cancer stage IV melanoma and ~~administered with a therapy prior to~~ administration of a biochemotherapy; and

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~~detecting one or more~~ analyzing DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the ~~12q22-23~~ region in the sample on the DNA, wherein LOH of any of the markers D12S1657, D12S393, D12S1706, and D12S346 indicates poor efficacy of the therapy biochemotherapy.

36. (Original) The method of claim 35, wherein the sample is a serum sample.

37. (Original) The method of claim 35, wherein the sample is a plasma sample.

38. (Withdrawn) The method of claim 35, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

39. (Original) The method of claim 35, wherein the DNA markers are associated with the *APAF-1* gene.

40-43. (Canceled)

44. (Currently amended) A method of determining the probability of survival, comprising:

providing a sample containing DNA from a human subject suffering from a stage III or IV melanoma ~~metastatic cancer~~; and

~~detecting one or more~~ analyzing DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the ~~12q22-23~~ region in the sample on the DNA, wherein LOH of any of the markers D12S1657, D12S393, D12S1706, and D12S346 indicates a low probability of survival.

45. (Original) The method of claim 44, wherein the sample is a tumor sample.

46. (Original) The method of claim 44, wherein the sample is a serum sample.

47. (Original) The method of claim 44, wherein the sample is a plasma sample.

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48. (Withdrawn) The method of claim 44, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

49. (Original) The method of claim 44, wherein the DNA markers are associated with the *APAF-1* gene.

50-51. (Canceled)

52. (Currently amended) The method of claim ~~51~~ 44, wherein the melanoma is an RLM melanoma.

53. (Currently amended) The method of claim ~~51~~ 44, wherein the melanoma is an ITM melanoma.

54-57. (Canceled)

58. (Currently amended) A method of determining the probability of responsiveness to a ~~therapy melanoma biochemotherapy~~, comprising:

providing a sample containing DNA from a human subject suffering from cancer stage IV melanoma prior to administration of a biochemotherapy; and

~~detecting one or more~~ analyzing DNA markers including D12S1657, D12S393, D12S1706, and D12S346 in the 12q22-23 region in the sample on the DNA, wherein LOH of any of the markers D12S1657, D12S393, D12S1706, and D12S346 indicates a low probability of responsiveness to a therapy the biochemotherapy.

59. (Original) The method of claim 58, wherein the sample is a tumor sample.

60. (Original) The method of claim 58, wherein the sample is a serum sample.

61. (Original) The method of claim 58, wherein the sample is a plasma sample.

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62. (Withdrawn) The method of claim 58, wherein the DNA markers include D12S1657, D12S393, D12S1706, D12S346, or a combination thereof.

63. (Original) The method of claim 58, wherein the DNA markers are associated with the *APAF-1* gene.

64-70. (Canceled)

71. (Withdrawn) A packaged product, comprising  
a container;  
one or more agents for detecting one or more DNA markers at the *12q22-23* region in a sample; and  
an insert associated with the container and indicating that the sample contains acellular DNA.

72. (Withdrawn) A packaged product, comprising  
a container;  
one or more agents for detecting one or more DNA markers at the *12q22-23* region in a sample from a subject suffering from a metastatic cancer; and  
an insert associated with the container and indicating that LOH of the markers indicates a low probability of survival.

73. (Withdrawn) A packaged product, comprising  
a container;  
one or more agents for detecting one or more DNA markers at the *12q22-23* region in a sample from a subject suffering from cancer; and  
an insert associated with the container and indicating that LOH of the markers indicates a low probability of responsiveness to a therapy.

74. (Previously presented) The method of claim 1, wherein the DNA markers include a combination of D12S1657, D12S393, D12S1706, and D12S346.

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75-80. (Canceled)

81. (New) The method of claim 1, wherein the sample is a blood sample.
82. (New) The method of claim 6, wherein the sample is a blood sample.
83. (New) The method of claim 17, wherein the DNA exists as acellular DNA in the subject.
84. (New) The method of claim 17, wherein the sample is a blood sample, or a melanoma or colon cancer tissue sample.
85. (New) The method of claim 26, wherein the DNA exists as acellular DNA in the subject.
86. (New) The method of claim 26, wherein the sample is a blood sample, or a melanoma, colon cancer, or brain cancer tissue sample.
87. (New) The method of claim 35, wherein the DNA exists as acellular DNA in the subject.
88. (New) The method of claim 35, wherein the sample is a blood sample, or a melanoma tissue sample.
89. (New) The method of claim 44, wherein the DNA exists as acellular DNA in the subject.
90. (New) The method of claim 44, wherein the sample is a blood sample.
91. (New) The method of claim 58, wherein the DNA exists as acellular DNA in the subject.
92. (New) The method of claim 58, wherein the sample is a blood sample.

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93. (New) A method of detecting colon or breast cancer, comprising:  
providing a sample containing DNA from a human subject; and  
analyzing DNA markers including D12S1657, D12S393, D12S1706, and  
D12S346 on the DNA, wherein LOH of any of D12S1657, D12S393, D12S1706, and  
D12S346 is indicative of colon or breast cancer.
94. (New) The method of claim 93, wherein the DNA markers are associated with  
the *APAF-1* gene.
95. (New) The method of claim 93, wherein the DNA exists as acellular DNA in  
the subject.
96. (New) The method of claim 93, wherein the sample is a blood, serum, or  
plasma sample, or a colon or breast cancer tissue sample.